REMARKS

Claims 1-3, 36-38 and 71-73 are pending in this application. Claims 1-3, 36-38 and 71-73 have been rejected under 37 C.F.R. §103(a). Claims 1-3, 36-38 and 71-73 have been amended in this response.

Rejections under 35 U.S.C. §103(a)

Claims 1-3, 36-38 and 71-73 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,621,805 issued to Loh et al. on April 15, 1997 (hereinafter "Loh") in view of U.S. Patent No. 6,636,609 issue to Ha et al on October 21, 2003 (hereinafter "Ha").

Independent Claims 1, 36 and 71

With respect to independent claims 1, 36 and 71, the Office states that:

> Loh does not explicitly disclose automatically determining the scale factor for each of said digital audio files based on an analysis of said at least two digital audio files by a digital processing unit.
>
> Ha discloses automatically determining the scale factor for each of said digital audio files based on an analysis of said at least two digital audio files by a digital processing unit. (i.e. an automatic volume adjusting apparatus controlled by a microcomputer; FIG. 7; the digital signal processing unit determines the energy value and determines whether the audio signal is in a music mode or a sound mode so as to be compensated by a volume level require by a user, the tone volume control unit adjusts the volume of the audio signal output under the control of the microcomputer, col. 8 lines 4-20).

Office Action, pages 2-3.

Applicants respectfully disagree that Ha discloses automatically determining a scale factor for each of said digital audio files based on an analysis of said at least two digital audio files by a digital processing unit. First, it is necessary to understand Ha in its entirety.

In Ha, "an audio signal processing apparatus for a television set" is shown in FIG. 2. Ha, col. 4, lines 29-30. In Ha, a person watching television sets the television volume. Also, the person selects a television station or channel.

> The apparatus includes a tuning unit 201 for selecting a channel required by a user from a plurality of channels in accordance with high frequency broadcasting signals received through an antenna....

Ha, col. 4, lines 32-35. The person's selection of stations is received by the tuning unit 201 to capture the desired station from the antenna and deliver the broadcast video and audio signal via block 202 to block 203 which is the input signal selecting unit. As the name implies, the input signal selecting unit block 203 selects the input signal. For example, instead of choosing from a plurality of television channels, the person may choose to watch "a VCR, a CD player or an LD player." Ha, col. 5, line 19. In Ha, the choices are between watching broadcast television or something from an external device. The audio signal of an external device is inputted to block 203 via the arrow in FIG. 2 labeled EAUin (External Audio Unit in). The user selects between TV and VCR and the input signal selecting unit 203 outputs the appropriate audio signal.

The input signal selecting unit 203 is "for outputting to an image processing unit the video signal received from the wave detecting unit 202 *and one selected from* the audio signal outputted from the wave detecting unit 202 and an external audio signal EAUin." Ha, col. 4, lines 40-42 (emphasis added). Emphasis has been added to stress the fact that only one audio signal is outputted from the input signal selecting unit block 203. Ha, col. 5, lines 22-25 ("Then, the input signal selecting unit 203 *outputs one selected from* audio signals, that is broadcasting audio signal and the external audio signal EAUin in accordance with the control signal CS1 outputted from the microcomputer 206."). If Loh is combined with Ha as the Office suggests, then arguendo, there must be only one output audio signal emanating from the combination because from a plurality of channels (see Loh FIG. 7 "data sources") the input signal selecting unit 203 has selected only one for input to block 204. The Office's suggested combination of Loh and Ha would render Loh useless for its intended purpose for mixing because only one

audio signal would exit block 203 and hence block 204 (block 712 in Loh) and there would be no other signal to mix that one signal with. If the Office somehow still believes that its combination permits multiple audio signals to emanate for mixing at the digital adder in Loh, then the combination would render Ha useless for its intended purpose to have only one audio signal outputted to the television viewer. It would be absurd to think that Ha intended to teach or suggest combining the audio from TV with the audio from a VCR. Hence, because there is no reasonable expectation of success as required to establish a prima facie case of obviousness and because the respective inventions would be rendered useless for their intended purposes, the claims are non-obvious and in a condition for allowance.

It is important to see that the output from the input signal selecting unit block 203 that is delivered to the automatic volume adjusting apparatus block 204 is a single signal previously selected by the user in block 203. This single signal is what undergoes analysis with respect to itself in predetermined periods of time. In Ha, the analysis does not leave room to include another file for determining a scale factor because there is only one signal inputted into block 204 and the analysis proceeds based upon this single file which has been previously selected at the input signal selecting unit 203.

If the Office dissects the automatic volume adjusting apparatus block 204 from Ha, reproduces block 204 multiple times and drops the multiple blocks 204 into Loh for each location of "Digital Volume Control" of Loh at 712 in FIG. 7, applicants maintain that there is no disclosure, teaching or suggestion for such surgery required to make the combined modification in the references themselves or to one of ordinary skill in the art. Nonetheless, applicants will entertain the aforementioned suggested combination to point out yet another distinction of the present invention that is not met by the combination. This distinction is the determination of a scale factor based on at least two digital audio files. If multiple blocks of 204 are dropped into Loh at location 712, the input to the first block 204 would be a single signal from data source 1, the input to the second block 204 would be a single signal from data source 2 and so on. Then according to Ha, block 204 would proceed to make its analysis based on data

source 1 alone and in predetermined intervals of itself. And, the second inserted block 204 would proceed to make its analysis based only on data source 2 alone and so on. Each block 204 while analyzing its own data does not incorporate and provide that data to another instance of 204 residing in Loh. For these reasons, Ha does not disclose, teach or suggest the determination of a scale factor based on at least two digital audio files.

Still referencing Ha, a television user sets a volume at which the user desires to watch television. In Ha, this volume adjustment of the television program is a manual adjustment made by the user and may be considered to be a scale factor. However, in the present invention, the scale factors are not set by the user but are claimed to be *__automatically__* determined according to a predetermined definition. With the volume set by the user, the single audio signal associated with the television program, for example, that is inputted to block 204 may still change volume during the course of the program. Ha describes the change in volume in the single audio signal as follows:

> For example, a television broadcasting may generate a silent sound and a loud sound at a short instance, and accordingly if a channel conversion is carried out when compensating at a single time, a normal compensating operation may be performed. However, a moderate sound following a loud sound is compensated in a smaller one, whereas a moderate sound following a small sound tends to be further amplified, so that three consecutive operations of the one short time compensation is employed.

Ha, col. 7, lines 55-63. Ha further illustrates how the volume of an audio signal may vary in FIG. 5A of Ha where the amplitude across time of the single audio signal changes dramatically during the course of a program. In essence, Ha compensates for these fluctuations in volume in a single audio file, calculates a volume compensation value and adjusts the volume with this value to maintain the TV volume level initially and manually set by the user. Ha is continuously adjusting the volume of the television program to maintain the volume level set by the user.

Ha's aim is a volume limiter. Ha states at col. 5, lines 39-42 as follows:
> Therefore, the automatic volume adjusting apparatus 204 adjusts the volume being outputted to the voice control unit

205 in accordance with the volume compensating control signal, *so that the volume previously required by a user can be maintained*.

Specifically, the automatic voice adjusting apparatus block 204 includes an energy detecting unit 302 which is part of 204. "The energy detecting unit 302 accumulates therein an energy of the audio signal outputted from the low-pass filter and amplifier 301 for *a predetermined time period*. The microcomputer 206 compares an energy value calculated in the energy detecting unit 302 with that of the previous step and outputs a volume control signal to output as much gain as the difference obtained by the comparison. The volume control unit 303 compensates the sound volume of the input audio signal in accordance with the volume control signal outputted from the microcomputer 206 and outputs the compensated value." Ha, col. 4, line 65- col. 5, lines 1-8 (emphasis added). Ha further states as follows:

> The automatic volume adjusting apparatus 204 accumulates therein the energy of the audio signal AU outputted from the input signal selecting unit 203 *in predetermined periodic time order*, and the resultant value is outputted to the microcomputer 206.

Ha, col. 5, lines 27-31. And also at col. 6, lines 59-65 Ha states as follows:

> The signal interpreter 406 analyzes the audio signal on the ground of the energy value of the audio signal being applied thereto by being calculated through such steps as above *for a predetermined time period*, and the analyzed value is transferred to the microcomputer 206. Then, the asynchronous counter 404 becomes reset with a predetermined time of cycles.

And at col. 3, lines 9-15, Ha states:

> an energy detecting unit for calculating an energy of the audio signal amplified in the low-pass filter and amplifier, a microcomputer for adding up an energy value of the audio signal obtained by the energy detecting unit *for a predetermined time period, comparing the audio signal energy value with one obtained at a previous step thereof*, and outputting a volume-compensated control signal

It is clear in Ha that the analysis is performed for a predetermined time period for determining a volume compensation value. In fact, the predetermined time period Ha uses for analysis is 150 milliseconds (Ha, col. 7, line 23.). In contrast, the present invention does not

9

predetermine the time period for analysis, and a volume limiter like Ha would be useless if the time period were increased to the length of, for example, a standard music file. Even if Ha increased the period to one second, a loud sound produced within a second could make the TV viewer jump. Furthermore, there is no single file in Ha. The television program in Ha is continuously streaming and therefore, there is no way that the volume compensation can be determined based on the entirety of the television program or file as required in the claims. If it were determined based on the entirety of the television program, it would be too late, that is, the viewer would have finished viewing the program before the system would have been able to determine the scale factor and adjust the volume accordingly.

As illustrated above, Ha uses a predetermined time period for determining the volume compensation value so that the volume can be compensated *while the user is watching the program*. Because Ha uses a predetermined time period for determining the volume compensation value, a new value is recalculated for each predetermined time period based on a comparison to the previous time interval to account for volume fluctuations and scale the volume accordingly. Therefore, the volume compensation value in Ha varies continuously. This is advantageous in Ha because the user may wish to manually change the initial volume setting during the program and Ha would compensate the volume to maintain this setting. If the volume compensation value in Ha was determined based on the entirety of the program, then the volume compensation value would miss the mark for maintaining the manual volume setting made by the user if the user were to change that volume setting during the program.

In contrast to Ha, in the present invention, the scale factor is based on an analysis of the *entirety of not only a single audio file but of each of said at least two digital audio files*. Applicants have amended the independent claims to clarify the invention by including this limitation. As noted previously, Ha's volume compensation value varies continuously. If in the present invention, the scale factor would be varied continuously, all volume dynamics would be lost. For example, if a student's musical performance was scaled continuously as required by Ha, there would be no knowledge of where the student has played an instrument too loudly or

softly because the student's performance would be adjusted to maintain the user's preset volume and the lesson or ability to evaluate the student's performance would be lost. There would be no way to account for an increase in volume of the performance and whether to attribute it to the student's performance or to the volume compensation carried out by Ha's system. In order to establish a prima facie case of obviousness, the prior art reference or references must teach or suggest all of the claim limitations. Because the Loh and Ha do not disclose, teach, or suggest the claim limitation of each scale factor being based on the entirety of each of said at least two digital audio files, the present invention is not obvious and is in a condition for allowance.

Dependent Claims 2, 37 and 72

Applicants have amended dependent claims 2, 27 and 72 such that the digital audio mixing is resident on the server and initiated upon receiving one of said at least two digital audio files form said client device. Because the prior art does not disclose, teach or suggest at least these claim limitations and the claim limitations of the independent claims from which these claims depend, applicants believe that claims 2, 37 and 72 are in a condition for allowance.

Applicants traverse the Office's official notice taken with respect to using Loh's computer as a server coupled to other client devices over a network. It is one thing to take official notice of using a computer generally over network and quite another to take official notice with respect to specifically using Loh's computer and arbitrarily splitting certain functions of Loh and placing them some of them on a server device while maintaining others on a client device. Therefore, applicants maintain that official notice cannot be taken for specifically using Loh's computer with its inherent functions operatively coupled over a network. However, applicants believe that the issue of official notice is now moot in light of the amendments made to the claims.

Dependent Claims 3, 38 and 73

Because of the amendments made to the independent claims from which these claims depend and for the reasons detailed above with respect to those claims, applicants believe that dependent claims 3, 38 and 73 are non-obvious and in a condition for allowance.

In view of the foregoing remarks, applicants respectfully submit that the application is in a condition for allowance, and action toward that end is earnestly solicited. In the event that a telephone conference would expedite prosecution of this patent application, the Examiner is invited to contact the Attorney for Applicants at the number listed below.

Respectfully submitted,

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